

WHAT IS CLAIMED IS:

1 A vehicular parking brake apparatus, comprising:  
 a right-side parking brake and a left-side parking brake that brake a  
 right-side wheel and a left-side wheel, respectively, of at least one group of a front  
 wheel group and a rear wheel group of a vehicle;

a drive power source that operates the right-side parking brake and the  
 left-side parking brake; and

a controller that controls the drive power source, the controller  
 including an antilock control portion that commonly controls an operating force of  
 the right-side parking brake and an operating force of the left-side parking brake  
 produced by driving the drive power source, based on a state of slip of a wheel of the  
 right-side wheel and the left-side wheel that exhibits a greater change in a state of  
 wheel rotation.

2. The vehicular parking brake apparatus according to claim 1, wherein  
 the drive power source commonly drives the right-side parking brake and the left-side  
 parking brake, and the right-side parking brake and the left-side parking brake  
 comprise:

brakes that are provided for the right-side wheel and the left-side  
 wheel, respectively; and

a transfer device that connects the brakes to the drive power source  
 and has an equalizer which distributes a drive power of the drive power source  
 equally to the brake of the right-side wheel and the brake of the left-side wheel.

3. The vehicular parking brake apparatus according to claim 2, wherein  
 the antilock control portion comprises a common drive power source control portion  
 that commonly controls the operating force of the right-side parking brake and the  
 operating force of the left-side parking brake by controlling the common drive power  
 source.

4. The vehicular parking brake apparatus according to claim 3, wherein  
 the antilock control portion commonly controls the operating force of the right-side  
 parking brake and the operating force of the left-side parking brake based on the state  
 of slip of the wheel of the right-side wheel and the left-side wheel that exhibits a  
 greater slip.

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5. The vehicular parking brake apparatus according to claim 2, wherein the antilock control portion commonly controls the operating force of the right-side parking brake and the operating force of the left-side parking brake based on the state of slip of the wheel of the right-side wheel and the left-side wheel that exhibits a greater slip.

6. The vehicular parking brake apparatus according to claim 1, wherein the antilock control portion commonly controls the operating force of the right-side parking brake and the operating force of the left-side parking brake based on the state of slip of the wheel of the right-side wheel and the left-side wheel that exhibits a greater slip.

7. A vehicular parking brake apparatus, comprising:  
a drive power source provided on a vehicle body of a vehicle;  
a parking brake including a brake provided on a wheel that is connected to the vehicle body via a suspension device, and a transfer device that mechanically transfers a drive power of the drive power source to the brake; and  
a controller that controls an operating force of the parking brake by increasing/reducing the drive power of the drive power source while reducing an overshoot of a state of slip of the wheel corresponding to the parking brake.

8. The vehicular parking brake apparatus according to claim 7, wherein the transfer device includes a transfer member train, and the controller includes a stroke control portion that controls a drive stroke of the transfer member train so that the drive stroke approaches a target stroke determined based on the state of slip of the wheel.

9. A vehicular parking brake apparatus, comprising:  
a drive power source;  
a parking brake that is operated by driving the drive power source; and  
a parking brake controller that controls an operating force of the parking brake by switching the drive power source at least between an increase state in which the drive power source is operated so that the operating force of the parking brake is increased, and a decrease state in which the drive power source is operated so that the operating force of the parking brake is decreased, based on a state of slip of a wheel corresponding to the parking brake.

10. The vehicular parking brake apparatus according to claim 9, wherein the parking brake controller has a hold state in which the drive power source is operated so that the operating force of the parking brake is maintained, and the parking brake controller sets the hold state at a time of switching between the increase state and the decrease state.

11. The vehicular parking brake apparatus according to claim 10, wherein the parking brake controller sets the drive power source to the decrease state if the state of slip of the wheel exceeds a predetermined upper threshold.

12. The vehicular parking brake apparatus according to claim 11, wherein the parking brake controller sets the drive power source to the increase state at a time point when the state of slip of the wheel starts to decrease from a peak value.

13. The vehicular parking brake apparatus according to claim 10, wherein the parking brake controller sets the drive power source to the increase state at a time point when the state of slip of the wheel starts to decrease from a peak value.

14. The vehicular parking brake apparatus according to claim 9, wherein the parking brake controller sets the drive power source to the decrease state if the state of slip of the wheel exceeds a predetermined upper threshold.

15. The vehicular parking brake apparatus according to claim 14, wherein the parking brake controller sets the drive power source to the increase state at a time point when the state of slip of the wheel starts to decrease from a peak value.

16. The vehicular parking brake apparatus according to claim 9, wherein the parking brake controller sets the drive power source to the increase state at a time point when the state of slip of the wheel starts to decrease from a peak value.

17. A control method of a vehicular parking brake apparatus, comprising:  
determining a change in a state of rotation of one of a right-side wheel and a left-side wheel;

determining a state of slip of one of the right-side wheel and the left-side wheel that exhibits a greater change in the state of rotation; and

commonly controlling an operating force of a right-side parking brake and an operating force of a left-side parking brake based on the determined state of slip.

18. A control method of a vehicular parking brake apparatus, comprising:

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increasing/decreasing a drive power of a drive power source that operates the parking brake while reducing an overshoot of the state of slip; and

19. A control method of a vehicular parking brake apparatus, comprising:  
determining a state of slip of a wheel corresponding to a parking  
brake;

operating the drive power source to decrease the operating force of the parking brake if the state of slip exceeds a predetermined upper threshold; and

20. The control method according to claim 19, wherein the drive power source is operated to keep the operating force of the parking brake at a constant value when the operating force of the parking brake is increased and then decreased, and when the operating force of the parking brake is decreased and then increased.